

REMARKS

The present application was filed on March 17, 2000 with claims 1 through 44. Claims 1 through 44 are presently pending in the above-identified patent application. Claims 1, 21, 22, and 42-44 are proposed to be amended herein and claims 12 and 33 are proposed to be cancelled.

5 In the Office Action, the Examiner objected to the drawings as failing to comply with 37 CFR 1.84(p)(5). The Examiner also rejected claims 1-3, 8-12, 18-20, and 43 under 35 U.S.C. § 102(e) as being anticipated by Chaudhuri (United States Patent Number 6,324,162) and rejected claims 6, 7, 13-15, 22-42, and 44 under 35 U.S.C. §103(a) as being unpatentable over Chaudhuri, and further in view of admitted prior art.

10 The present invention is directed to a method and apparatus for monitoring and signaling a path restoration using pre-computed restoration paths following a detected fault on a primary service path in a communications network. A fault occurring inside the restorable portion of a network in heterogeneous or multiple network environments can be distinguished from faults occurring outside the restorable network in accordance with the ANSI Tandem Connection
15 Maintenance standard, T1.105.05-1994. Path restoration is activated only when a fault causing path failure occurs inside the restorable portion of the network. Each conforming node in the restorable portion of the network has the necessary monitoring, signaling and cross-connect functionality and databases to participate actively in real time restoration. Additional non-conforming network elements can be positioned between the restoration nodes without preventing path restoration. With
20 the signaling architecture of the present invention, when an end-node detects a path failure caused by an in-network fault, it formulates a signaling message for restoring the failed path. The restoration signaling message is thereafter relayed from one node to another in the overhead or payload of signaling paths that occupy the same bandwidth that is subsequently used by the restoration path. Once a signaling message is transmitted to an adjacent node in the overhead or payload of a
25 particular signaling path, the node that transmitted the message makes a cross-connect that replaces the signaling path with a segment of the restoration path whose set-up was requested in the transmitted signaling message.

The specification and claims 21 and 42 have been amended to correct typographical errors.

Drawings

5 The drawings have been objected to as failing to comply with 37 CFR 1.84(p)(5). In particular, the Examiner notes that all the reference signs of FIG. 6 disclosed on page 18 of the specification are missing.

FIG. 6 has been amended to incorporate the reference signs disclosed in the specification and Applicants respectfully request that the objections to the drawings be withdrawn.

Independent Claims 1, 22, 43 and 44

10 Independent claims 1 and 43 were rejected under 35 U.S.C. § 102(e) as being anticipated by Chaudhuri et al. and independent claims 22 and 44 were rejected under 35 U.S.C. §103(a) as being unpatentable over Chaudhuri et al., and further in view of admitted prior art.

15 Regarding claim 1, the Examiner asserts that Chaudhuri discloses “signaling restoration using the restoration path segments pq, rs, and tu, which are also used as restoration path segments after signaling.” Col. 12, line 54, to col. 13, line 10.

Applicant notes that the network disclosed by Chaudhuri is composed of homogeneous network elements that are capable of participating in the signaling and restoration of service in the network. Chaudhuri does not disclose or suggest the restoration of services in networks that contain non-conforming network elements. Independent claims 1, 22, 43, and 44, as
20 amended, require wherein said *signaling path transits non-conforming network elements*. The Examiner previously considered this limitation when reviewing claim 12. Regarding claim 12, the Examiner asserted that nodes 12F and 12G disclosed on page 12, lines 54-65, by Chaudhuri are considered the non-conforming elements. The specification of the present invention describes non-conforming elements as,

25 for example, older generation network elements of a given manufacturer, or network elements provided by a number of manufacturers. The non-conforming network elements *do not provide the necessary monitoring, signaling and cross-connect functionality and databases to participate actively in real time restoration in accordance with the present invention*. However, according to a feature of the present invention, discussed further below, the restoration techniques of the present invention work even in the presence of such non-
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not claimed

conforming network elements.

Page 14, lines 6-13.

5 Nodes 12F and 12G, however, participate in the signaling and restoration of service, as noted in the text cited by the Examiner, and therefore have the necessary functionality and databases. Thus, nodes 12 F and 12G are conforming elements.

Thus, Chaudhuri do not disclose or suggest “said at least one signaling path transits non-conforming network elements,” as required by independent claims 1, 22, 43, and 44, as amended.

10 Dependent Claims 2-21 and 23-42

Dependent claims 2-3, 8-12, and 18-20 were rejected under 35 U.S.C. § 102(e) as being anticipated by Chaudhuri and rejected claims 6, 7, 13-15, and 23-42 were rejected under 35 U.S.C. §103(a) as being unpatentable over Chaudhuri, and further in view of admitted prior art.

15 Claims 2-21 and 23-42 are dependent on claims 1 and 22, respectively, and are therefore patentably distinguished over Chaudhuri and admitted prior art (alone or in any combination) because of their dependency from amended independent claims 1 and 22 for the reasons set forth above, as well as other elements these claims add in combination to their base claim.

20 If any outstanding issues remain, or if the Examiner has any further suggestions for expediting allowance of this application, the Examiner is invited to contact the undersigned at the telephone number indicated below.

The Examiner's attention to this matter is appreciated.

Respectfully submitted,



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